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ABSTRACT

This pamphlet, which discusses motivation and learning in school, is part of a series of booklets and monographs written in nontechnical language so that beginning teachers and the general public may gain a better understanding of educational problems. The pamphlet is organized in a series of questions and answers concerning motivation. Some of the points that these questions cover are as follows: (1) the definition of motivation; (2) the relationship between motivation and achievement; (3) characteristics of the motivated student; (4) psychological requirements for survival in our environment; (5) sources of learning for students; (6) the validity of I.Q. tests; (7) motivation as an indicator of performance of learning tasks; (8) the different dimensions of academic motivation (internal-external, intake-output, approach-avoidance); (9) how certain events affect and change student motivation; and (10) how teachers and administrators can affect the climate for motivation. (BD)

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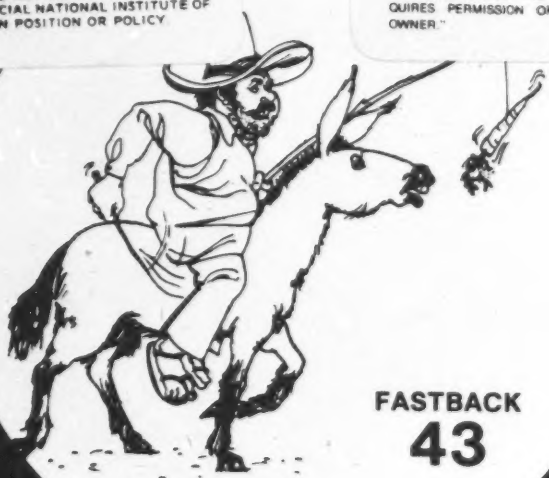

FASTBACK
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JACK R. FRYMIER

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Frymier is the author of four books and numerous articles on education. He also serves as editor of "Theory Into Practice," and of the quarterly journal, *The Educational Forum.*

Series Editor, Donald W. Robinson

MOTIVATION AND LEARNING IN SCHOOL

By Jack R. Frymier

with the assistance of
Edgar Dale and Carolyn Hamilton

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MOTIVATION AND LEARNING IN SCHOOL

Motivation is a concept clouded with even more perplexity and doubtful meaning than many other educational terms well known for their ambiguity or obscurity of meaning. Many teachers conceive of motivation as "the practical art of applying incentives and arousing interest for the purpose of causing a pupil to perform in a desired way." Some would add that it implies "the act of choosing study materials of such a sort and presenting them in such a way that they appeal to the pupil's interests and cause him to attack the work at hand willingly and to complete it with sustained enthusiasm." Other school people use the word to designate the use of various devices such as the offering of rewards or an appeal to the desire to excel.

The author of this fastback, who has devoted many years to the examination and analysis of motivation, would question most of these definitions and reject some as being more closely associated with manipulating the motivations of others than with motivation per se. His view of motivation deals more with the why of human behavior than with gimmicks for the control of the behavior of others. And he readily concedes that motivation is a sticky notion to try to reduce to a simple definition, so we encouraged him to expand on the term in interview form:

Q. *The man on the street might define motivation as one's reasons for doing what one does. Is this too simple?*

Far too simple. Few people who have studied motivation will say that they know exactly what it is or fully understand

its workings. But motivation is far more complex than the layman's definition.

Motivation is related to man's inner impulses and is closely associated with his values. Motivation gives direction and intensity to man's behavior. It significantly affects his abilities and his achievement.

Q. *Is it the relationship between motivation and achievement that primarily draws your attention as an educator?*

All that affects human behavior should be of interest to educators. The better we know man, the better our educational designs will serve him. Of course, motivation in the classroom is particularly significant because educators want to know why some youngsters lose their interest in learning after they enter school.

During the past several years we have been engaged in a series of research efforts related to academic motivation. To date, more than 20,000 young persons have been involved in these studies in one way or another.

Using cross-disciplinary approaches to develop valid and reliable measurement instruments, my colleagues and I at the Center for Study of Motivation and Human Abilities have studied the responses from a cross section of adolescents and young adults, of students from depressed rural regions such as Appalachia, small towns, plush suburbs, inner-city schools, segregated schools in the South, de facto segregated schools in the North, medical schools, prisons and reformatories, and laboratory schools.

Q. *Were there any patterns of motivation evident in such a diverse group of subjects?*

Yes, and each pattern has obvious implications for the educator.

First, whatever it is that causes young people to strive in school, it is different for boys than it is for girls. Sex differences are fairly common in psychological research findings; they are also evident in our own motivational research and all other reports that I have read. The sex differences might

not be too important except that many teachers deal with youngsters in the classroom as though they were neuter gender.

Worse yet, some teachers relate to their students as if they were trying to make nice little girls out of the boys, but the boys will not have it. And I am with them, bless their recalcitrant little hearts. Studies repeatedly show that teachers call on girls more frequently than they call on boys and give girls higher marks, even though standardized achievement scores are generally the same or often even favor the boys.

Even though there is every reason to believe that boys and girls have about the same level of motivation when they enter school, by the time they enter junior high the average level among girls is more positive than the average level among boys. Later, in the senior high school and early college years, those patterns apparently begin to reverse. But during most of the time that they are in public school boys and girls differ considerably in motivation. These generalizations pertain to the averages for groups, of course, and not to individuals.

Second, whatever motivation is, it is somehow related to social class. We all suspect that, I guess, and the data in our studies clearly support the notion that youngsters from disadvantaged backgrounds have less positive motivation to learn in school than youngsters from advantaged backgrounds. Many federally sponsored projects were designed specifically to come to grips with this problem. The fact that not all of those projects have been dramatic successes should not cause us to give up—the problem still exists.

Third, motivation to learn in school is a very durable phenomenon. Motivation is not fixed, but it does not change much, except over extended periods of time. Today, this six-week's grading period, or even this semester is too short a period of time to expect much modification of an individual student's motivational pattern. If that sounds discouraging, just remember that it works both ways. That is, although it is very difficult in weeks or months to make any appreciable impact upon a student's motivation if he hates school, it will be equally difficult for a wooden-headed teacher who lacks

spirit or intelligence to dull a positively motivated youngster's desire to learn. He will be right there, day after day, working at the business of trying to learn whether his teacher inspires him or not. Motivation is relatively constant.

Finally, whatever motivation is, it probably ought to be thought of in optimal rather than maximal terms. To say it another way and perhaps more precisely, motivation is related to achievement in curvilinear rather than linear ways. Because of this, there is an optimal level of motivation appropriate for a maximal level of achievement. Motivation is like blood pressure. Too much of it is bad; too little is undesirable. Too much motivation gets in the way of learning.

Students who are too highly motivated may focus on a very narrow segment of their educational world and miss relationships in learning which are so important. They are less able to see patterns and make meaningful interpretations of the complexities of learning stimuli. Students whose motivation to learn is too low cannot focus their perceptual energies long enough or clearly enough to engage in experiences conducive to learning.

These generalizations still do not say what motivation is, but they do point out some of the factors to be considered if we want to understand motivation in any intelligent way.

Q. *Other than academic achievement, what are the hallmarks of the motivated youngster?*

We have identified some differentiating characteristics of young people whose motivations differ. Let me add that we use the terms "enthusiastic" and "unenthusiastic" in referring to differences in individual motivation.

Specifically, persons whose motivations are different have very different kinds of self-concepts, values, time perspectives, and personality structures, among other things. Enthusiastic students tend to have a positive concept of self, and unenthusiastic students tend to have a negative concept of self. In addition to the differences in the directional aspect of self-concept, young people whose motivations are positive tend to have a stronger and more clearly articulated image of self than students with negative motivation.

People whose motivations differ also have different value structures. Values represent what people believe in: what they are committed to and what they cherish. Values are very close to the center of self. And values give direction to behavior. For example, young people who are motivated to learn in school value the abstract, the aesthetic, and the general. Persons who are not motivated to learn in school tend to value the concrete and the particular. This may simply be a result of the correlation of motivation with social class described above; I do not know. The value patterns are very different, of that I am sure.

Perception of time is another way in which the positively motivated differ from the negatively motivated. In general terms, students who are enthusiastic tend to have what I call a healthy, or realistic, perception of time. Those who are unenthusiastic have an unhealthy perception of time. That is, youngsters who hate school are likely to be obsessed with the present, afraid of the future, or preoccupied with the past in what seems to me to be an unhealthy way. Unenthusiastic students cling to certain aspects of time or try to avoid them in ways which are not especially desirable psychologically. Students whose motivations to learn are positive, however, are more likely to be conscious of the present, aware of the future, and cognizant of the past. They draw upon all segments of time in positive, realistic, healthy ways.

All of these factors suggest differences in the personality structure and psychodynamics of people whose motivations are different. And that is so. Enthusiastic people tend to be more tolerant of ambiguity, more open to experience, and have available more perceptual energy to assimilate the new and the novel and the unknown inside their central nervous system. Persons who are less enthusiastic, on the other hand, are less tolerant of ambiguity, more closed to experience. They have more elaborate defense mechanisms, and they have less perceptual energy to seek out novelty and uniqueness in their perceptual field.

This means that positively motivated persons suspend judgment more readily, move toward the unfamiliar or unclear, and prejudge less frequently. Those who dislike school,

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however, are likely to be characterized as having a polarized thought process (using right or wrong categories, thinking in terms of good or bad, this or that) rather than seeing ideas as points along a continuum to be comprehended and explored.

Q. *Those descriptions have some frightening implications. The positively motivated person seems to have the attributes which would enable him to cope with the so-called future shock. However, it seems that the negatively motivated would feel threatened by the social and technological changes now underway and even more by those predicted for the future. What do we know about the psychological requirements for survival in our environment?*

Drawing upon the work of other scientists, Robert Ardrey generates a theory of motivation in *The Social Contract* which presumes three basic needs: identity, stimulation, and security. All animals, including man, possess these needs. Some people are understandably reluctant to generalize from animal studies to human behavior. However, Ardrey's basic theory is rooted in the nature of living tissue, and perhaps it is worth a try. Good theory in the area of motivation is hard to come by, and the needs for identity, stimulation, and security seem relevant and significant for people as well as animals.

For example, it has been argued that the need to know—the need for stimulation—is man's only insatiable need. All other human needs can be satisfied. The number of chairs or cars or television sets that a man needs is finite. Even the amount of food and water that a man can use has limits. All of our needs are satiable except the need to know. We need new information—facts and concepts, sensory data and experience—all the time.

The need to know is a pressing, relentless part of life itself. Unless we learn, we deteriorate and die. Like water, food, and air, stimulation is the stuff of life itself.

Q. *If the need to know is so basic, why do some youngsters and adults resist certain learning situations?*

Three things seem crucial: the positive and negative aspects of the unknown, the confusion of wants and needs, and the clarity and acceptability of goals.

The unknown attracts and it repels. Confronted with the uncertain and the unclear, man hesitates, and then goes slowly. Sometimes what we do not know can hurt us. It can maim. It can destroy. The unknown can be frightening. The suspicious, undiagnosed growth, a strange road on a foggy night, new dress styles we do not understand, or the arrogant neighbor who just moved next door arouse our anxieties to varying degrees. Until we find a way to anchor ourselves securely to the familiar, we are reluctant to consider, let alone embrace, the unknown and the novel.

We are fully aware that what we do not know may be very important to us. That is why the unknown attracts us as well as repels.

Whether we move toward or away from new experience and new information depends upon the kind of person we have become and the way we see ourselves. If we are secure, adequate, unthreatened, then we are more able to reach out and seek out the unfamiliar. If we are insecure, afraid, uncomfortable, then we are more likely to expend our energies conserving and defending what we are rather than moving toward what we might become. Man cannot step forward unless he has one foot planted firmly on solid ground.

In psychological terms, man cannot seek out and search in a world of unknown data if he lacks the security and stability of a positive concept of self. He must believe in his importance and his worth and in his capacity to cope with situations not already precisely known to him. The unknown attracts and it repels, but attraction and repulsion are perceptual phenomena: they reside primarily within the learner rather than being inherent in the stimuli themselves.

Q. *Does it follow that the school should be more concerned with the learner's need for a positive concept of self than with feeding him new information that he may not be psychologically equipped to handle anyway?*

Now we come to the problem of wants and needs. Con-

fusion of wants and needs has continually plagued parents and teachers. Can we infer needs from what people say they want? Hardly. Wanting a new car and needing one are not the same. Then, how do we deal with the concept of needs? How have educators traditionally approached the problem of students' needs?

In general terms, what students need to learn, that is, the curriculum, has conventionally been determined by drawing upon three basic sources: what we know about the nature of knowledge, the nature of society, and the nature of the individual.

For example, the structure of a discipline, the domain, and the methods which are unique and peculiar to each of the various areas of scholarly inquiry are all aspects of the nature of knowledge. The ways of the poet, for example, are different from the ways of the physicist. The aspect of reality to which they address their attention is different. The fundamental concepts and associated facts are different, too. Even the history of each discipline is unique and gives it an emphasis and flavor of its own. We can draw upon these kinds of information in our attempt to determine what students need to learn.

Another source from which we can draw is what we know about the nature of society: population patterns, demographic data, cultural values, institutional expectations, sentiments, and norms. What we know about the nature of social institutions, their traditions, and their change represents another important source as we attempt to ascertain what students need to learn.

A third source which we can employ to help determine what students need is what we know about the nature of the individual, his biological, physiological, and psychological structure and function: blood chemistry, perceptual defenses, cognitive style, neurological processes, achievement patterns, intellectual structure, and the like.

Realizing that wants are only clues regarding needs, educators have traditionally gone to these three sources—the disciplines, society, and the individual—for both information and inspiration about students' needs. Curriculum is

typically regarded as something like the seat of a three-legged stool: a solid base with three even legs. The seat of the stool represents the program, with one leg rooted firmly in what we know about the nature of knowledge, another in what we know about the nature of society, and a third in what we know about the nature of the individual. Such an idea is neat and understandable, but it is as wrong as wrong can be.

Q. *Is it wrong because all three sources are given equal importance by curriculum planners?*

In actual practice educational programs never reflect that kind of balance and equivalent use of sources. What seems to happen is that those who develop school programs subconsciously order these sources in hierarchical terms in their own mind, according to their own values. Certain sources are held to be more important than others, in other words, and the hierarchical ordering reflects this thinking.

For example, to presume that what we know about the nature of knowledge is of greatest worth and what we know about society and the individual are of lesser worth will reflect a particular kind of philosophical posture—a value position—about what students need to learn and need to know. Let us call that Assumption Number One. That assumption characterizes most of the secondary schools, colleges, and universities in the United States. These institutions are generally discipline oriented, and they are organized and operated on the basis of subject matter concerns.

If we shift our logic and assume that what we know about the nature of society is of greatest importance, then we are operating from a very different kind of philosophical stance. Let us call this Assumption Number Two. In my experience, this assumption characterizes most of our elementary schools, where the primary concern is for the group. Cooperation, politeness, taking turns, being quiet—all social expectations—are stressed by elementary teachers.

To presume that what we know about the nature of the individual is most important and the other factors secondary represents a very different kind of philosophical position. Let

us call this Assumption Number Three. In my experience, very few classrooms or schools anywhere reflect this ordering of curriculum sources as a way of meeting students' needs. Some experimental schools such as Summerhill are probably efforts in that direction, and individual teachers here and there implement such an assumption in their classroom every day. By and large, however, there are very few models to which we can turn if we want to see or understand this assumption in actual practice.

Q. *Is it possible that Assumptions One and Two are the prevailing ones because curriculum planners know more about the disciplines and society than they know about the individual—his motivations and needs?*

Regardless of the reasons for their dominance or lack of it, the different assumptions give rise to different kinds of educational purposes and goals. It is crucial to try to understand the way in which such assumptions are actually related to students' needs. And students do have needs: academic needs, social needs, and individual needs. The question is: which needs are most pressing and most important at any given age?

In physical terms, we know a lot about what people actually need, but when we shift to psychological or educational needs, there is a great void in what we know. All men need water and food and oxygen, for example. We know with considerable precision, in fact, which foods and which ingredients are absolutely essential to the maintenance of life itself. But who knows which facts, which concepts, which generalizations are absolutely essential to the maintenance of an individual's intellectual and emotional life?

Ardrey is probably right when he postulates that man needs stimulation—he needs to know—but can we design research studies to tell us specifically and accurately which stimuli are most essential to meet the individual student's learning needs? Differentiating needs from wants is a tremendous task, but it must be done.

Q. *If Assumption Three becomes the philosophical stance of the*

school, how will this influence the goals and purposes of education?

In my view educational purposes should be hierarchically related, with the most general statement being: *The basic purpose of schools is to help children learn.* But helping children learn means helping children learn:

1. to value learning
2. to want to learn
3. how to learn
4. to value knowledge
5. to acquire knowledge
6. to understand knowledge
7. to behave according to knowledge

The ultimate objective of the educational effort is to help youngsters learn to *behave according to the best knowledge* that is available at any given time. And motivation to learn ought to aim people in that direction. But helping people behave according to factual knowledge is not possible unless people *understand* that knowledge, unless they give meaning to that knowledge based upon their own past experience. Meaning always comes from the individual and what he has already learned. Understanding represents the union of past experience and new stimuli in the learner's mind.

Because acquisition of knowledge precedes understanding, schools must help youngsters *acquire knowledge*. Helping children acquire information and knowledge is an educational objective that must be realized before those students can proceed to objectives such as understanding and behaving. In the same way, helping children acquire knowledge is hardly meaningful unless those children value knowledge first. Unless they believe in the importance and value of information and facts and knowledge, mere acquisition is pointless.

This logic goes even further. Valuing knowledge is not possible unless youngsters have *learned how to learn.* That is, the skills of learning are not only means to more noble ends but purposes in their own right. Learning how to learn,

however, is meaningless if students have not *learned to want to learn*. In other words, learning to want to learn is an educational objective.

Helping children learn to want to learn, though, presumes that the children *value learning*, which is the most basic educational objective of all. Unless children have learned to believe in the value of learning as a human activity, nothing else will count much anyway.

Q. *In other discussions of motivation, you have said that motivation gives direction and intensity to human behavior. Does this apply to motivation for learning also? Does motivation give direction and intensity to learning?*

To be more precise we have to say that motivation is *that which* gives direction and intensity to behavior. And motivation to learn is *that which* gives direction and intensity to human behavior in an educational context. Motivation to learn in school is *that which* gives direction and intensity to students' behavior in a school situation.

It is important to define three of these words in the context of motivation concepts. Motivation is an *inferred* construct, *direction* implies selection from possible variations in purposes or goals, and *intensity* implies possible variation in degree of effort or energy put forth to attain the goal.

Q. *By inferred construct, do you mean that the teacher must somehow infer the student's motivation from his actions?*

In many ways, the problem is similar to the one we face in dealing with intelligence in an educational setting. We always infer the nature and degree of intelligence from observations of a student's behavior. No one really knows what intelligence is, so we simply watch what a student does (or study his performance on standardized tests) and then make inferences about his intellectual ability. We never actually measure his intelligence, but only how he uses *that which* he has. We have to use the same process to understand that which gives direction and intensity to what young people do in school.

Q. *I.Q. tests come in for a lot of criticism because some say they are inaccurate, and you are implying this. Are measures of motivation doomed to the same criticism?*

Over the years the power of the concept of intelligence has become so great that few persons have even attempted research studies without starting from the assumption that measured ability (IQ) is the most influential variable involved.

This is unfortunate. Our great strides in researching human intelligence have contributed immeasurably to our knowledge of what man is and how he learns. But an educational blind spot seems to have developed along with these advances. IQ scores appear to be exact, while other variables such as motivation or personality or cognitive style seem slippery and difficult to pin down with precision. However, the correlations between IQ and achievement always leave much to be desired.

Students who score high on measures of IQ tend to do better in school than students whose measured IQ is low (the fact that the original criterion measures for measured intelligence was teacher judgment of achievement in school would account for some if not most of that notion), but discrepancies persistently occur. All research in underachievement, for example, reflects both an awareness of and a probing interest in the fact that some students do not do as well as they ought to, when the "ought to" is defined in terms of measured aptitude or IQ. Something else must be involved.

Most educators account for the difference between predicted achievement and actual achievement by postulating the concept of motivation. In other words, motivation is invariably inferred from observations of behavior, usually in conjunction with a consideration of ability or IQ.

In the conventional wisdom of education, motivation and ability are recognized as relatively discrete phenomena. Because research and instrument development have proceeded much more rapidly in the area of intelligence than in the area of motivation, our understanding of learning ability is much greater than our understanding of motivation to learn.

Both are inferred constructs, but while ability summarizes observations about what an individual can do, motivation summarizes observations about what an individual will do or wants to do.

Q. *How does the motivation affect the degree of intensity with which the student pursues this "human activity?"*

Research studies have repeatedly shown that motivation is either affected by or a function of the number, quality, richness, intricacy, uniqueness, and complexity of stimulus material. All organisms, including human beings, need stimulation. When man is deprived of stimuli, like other organisms, he seeks stimuli or even makes his own. Over extended periods of time, people who exist in stimulus-deprived environments develop lower mental abilities; that is, their intelligence deteriorates, or in extreme cases they die. On the other hand, people who exist and function in rich and varied stimulus environments develop higher mental abilities; their intelligence increases. Organisms of all levels and kinds are attracted to rich stimulus sources, especially sources which are extensive, varied, and novel.

A second factor which affects the intensity of motivation is the personality structure of the learner, and especially his openness to experience. Persons who are maximally perceptive, adequate, and relatively unthreatened are drawn to the new and the novel and the unknown. Those who are psychologically closed, who have extensive defense mechanisms and perceptual barriers, tend to repel new stimuli. Openness is a function of self-concept and manifests itself especially in the response to stress or threat. The open individual is more curious, more inquiring, more excited, more motivated, if you please.

If openness is considered the extent to which an individual is perceptually capable of receiving and processing stimuli, then the style or manner in which he handles dissonance or ambiguous stimuli is another factor which affects the intensity of motivation. Dissonance may appear in either one or both of two forms, and the way in which the individual copes with either affects his motivation.

On the one hand, there may be a discrepancy between where the individual is (or what he has or what he knows or what he can do) and what he wants in the valuing sense. Inconsistencies, anomalies, and ambiguities appeal to a person who is psychologically open, and he works to resolve the dissonance. Likewise, when the individual senses that where he is and where he wants to go are not the same in terms of his value framework, he acts to resolve those kinds of inconsistencies, too. In other words, both cognitive dissonance and affective dissonance contribute to motivation.

The physiological functioning of the individual is another factor which affects the intensity of his motivation to learn. Basal metabolic rate, endurance, cardiovascular functioning, strength, and the like all play a part in motivation.

Anxiety is another factor which affects intensity of behavior. Anxiety is apprehensiveness in any given situation. It results from the interaction of the individual's concept of self, the number and quality of stimuli, and the dissonance which is perceived. A certain degree of anxiety seems to lure the learner forward into the learning task. Too much anxiety unquestionably drives him away. When the individual finds himself faced with an ambiguous or value conflict situation, he becomes uncomfortable and apprehensive. Whether the anxiety attracts or repels him is partly a function of the type and extent of the dissonance involved, partly a function of the adequacy and security of the self, and partly a function of the number and type of stimuli present. Persons with clear, strong, positive concepts of self are capable of perceiving and coping with greater dissonance and with more stimuli than those with less clear, weaker, more negative views of self.

It is important to note that there is a curvilinear relationship between anxiety as related to motivation and achievement behavior. Motivation can be too high. There is a point beyond which motivation debilitates rather than facilitates learning.

Too many stimuli, too much dissonance, too much uniqueness and novelty and ambiguity overwhelm the learner, and

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he withdraws from rather than proceeds toward the learning task. For example, an individual may respond to cognitive overload (too many stimuli) in many ways. He may queue the stimuli and deal with them one at a time. He may respond randomly to whatever stimulus enters his perceptual field. He may group stimuli into broad categories and respond to the categorizations rather than to the stimuli themselves. He may cease activity and wait for the overload to dissipate. Or he may withdraw. Cognitive "stuffing" and extreme dissonance do not affect motivation in positive ways; they impede learning. But no stimuli or too few stimuli or no dissonance at all result in inappropriate behaviors, too.

Q. *Can we assume that motivation, like intelligence, indicates how well the learner will perform on a specific learning task?*

Earlier, it was pointed out that motivation is more elusive and more difficult to pin down than intelligence as a factor in learning.

Motivation is a relatively constant phenomenon: it does not change much, except over extended periods of time. Values, cognitive style, perceptual defenses, and self-concept, for example, are all relatively durable. They will change, but generally only slowly. However, interest and perseverance, two other factors in achievement, are related to but different from motivation. Interest is basically short-term commitment. Perseverance is basically working style. The optimally motivated youngster may have difficulty persisting and may even lack interest in the immediate task at hand, but still be motivated to learn. And the opposite might also be true.

Q. *Can all this information be pulled together into a pattern for structuring learning activities, taking into account the school goals, the students' values, and the use of stimuli?*

We have developed a theoretical model of academic motivation which draws on our knowledge to date.

The term "academic motivation," however, may be too narrow. In the conventional academic setting, students are

motivated in many different ways, not all of which are positive. For example, some students are obsessed with a desire to get good grades, but to presume that grades relate directly to learning as it was outlined above is questionable in some cases, at least. It is true that students whose motivations to learn are positive will tend, on the average, to learn more, and thus they will generally receive higher marks from their teachers than students whose motivations to learn are negative.

But it is also true that some youngsters become puppetlike and parrotlike simply to get good grades, and one is forced to conclude that their conformity behaviors are basically unhealthy and undesirable. However, the fact that some students do as they are told in order to benefit positively from the experience and learn, conforming in the best rather than the worst sense of the term, complicates the matter still further. The point is that what causes students to strive in school and what factors are considered when teachers grade their achievement are complex and interrelated, and must be dealt with in terms of the complexities and interrelationships involved.

Many measures of academic motivation have been based almost exclusively on the criterion of grade point average. This tends to negate their usefulness because research studies have repeatedly demonstrated that students' grades are a function of achievement, congruence with teachers' values, socioeconomic background, intelligence, social acceptance, and motivation, among other things. Such motivation instruments may very well measure the motivation to get good grades, but to equate the factor with motivation to learn would, in my opinion, be a mistake of the most serious order. That such instruments often correlate positively with conformity and negatively with creativity simply underscores the point in another way.

Those who equate striving for good grades or following instructions with academic motivation will find our theoretical model broader and more comprehensive than their view. On the other hand, those who equate motivation in general with academic motivation in particular will find the model

much narrower and more restrictive than their global view. The attempt here is to deal with motivation in the academic realm in such a way that it is differentiated from motivation in general and from such specifics as the desire to get good grades.

Q. *With these cautions in our minds, will you outline the model in broad terms?*

Academic motivation has several dimensions. I will describe three of them here. These dimensions might ultimately prove to be factors in the statistical sense of that term, and there may very well be more than three. At the present time, however, the three basic dimensions of academic motivation seem to be *internal-external, intake-output,* and *approach-avoidance.* The labels are arbitrary. The dimensions appear to be real.

For the purpose of our discussion, the dimensions will be presented as dichotomized extremes—internal-external, and so forth. Let us look at the first dimension, the internal-external, in some depth.

Motivation to learn is in part a function of that which lies within the individual learner and in part a function of what he experiences from his learning environment. Because these two interact and affect one another, they are considered a single dimension, but it is undoubtedly a dimension with many aspects.

The internal portion of this dimension refers to the aspects of personality and value structure which the individual learner brings with him to the learning situation. Self-concept, perceptual style, belief system, and the like make up the internal part of academic motivation.

The external portion of this dimension refers to the environment as a stimulus source, and only those stimuli which are available within the immediate external environment are considered relevant: textbooks, parental approval, facial expressions of the teacher, filmstrips, blackboard diagrams, teacher talk, reference materials in the school or home library, peer reactions, quality of language spoken in the

home, number of new ideas encountered during the day, and the like.

The internal-external dimension appears to reflect the source of academic motivation. That is, motivation to learn is in part a function of what resides within the individual and in part a function of the external world he encounters. Some positively motivated youngsters seem to draw most heavily upon forces located within themselves to enhance their learning. They believe in learning and knowledge, for example. They are intrigued by the new and novel; ambiguity and uncertainty excite them. They feel adequate, unthreatened, and secure. Other students, equally well motivated, seem to be positively affected by the quality and quantity of stimuli in the school. Exciting lectures, fascinating movies, vivid illustrations, and intense discussions are likely to spark these students' efforts.

To say it in still another way, some students apparently draw primarily upon internal factors in their desire to learn in school. Other students seem to draw primarily upon external factors. Still others draw heavily upon both. As far as the internal-external dimension is concerned, there does not seem to be one right balance or ratio of internal and external factors, but there undoubtedly is a right direction to both of these factors.

That is, a student whose motivation to learn is positive almost inevitably evidences good mental health and functions most productively in a rich and varied stimulus environment. Youngsters who hold negative feelings about themselves, who are insecure, frightened, inadequate people or who repeatedly encounter a barren stimulus situation—limited number or poor quality of ideas, books, discussions, pictures—are much less apt to be positively motivated to learn. However it is described, the internal-external dimension seems to be the source of academic motivation.

The second dimension is called intake-output; it could be called consumption-production. Students who are avid readers and thoughtful listeners—who seek information and new experiences in every way—are intake types. Other students

are output people. They write. They talk a lot. They generate ideas and concepts. Their motivations propel them to active rather than passive roles.

The intake-output dimension, then, seems to reflect the *form* or *style* of academic motivation—the actual substance of motivated behavior when it appears. Again, there is probably no right form, although there are undoubtedly various types of persons. That is, some positively motivated students are intake persons, others are output people, and still others reflect a balance between these two styles. Negative academic motivations would probably reflect themselves in very different behaviors.

Any careful study of learning in an academic setting suggests clearly that some students move toward teacher approval, stimulus ambiguity, novelty, social acceptance, and the like, while other students move away from such things. The approach-avoidance dimension, therefore, seems to be the *directional* dimension of academic motivation. However, once again the positive and negative aspects of directional dimension are complex and not easily ascertained or understood. Though some students move toward good grades and teacher approval and other students move away from them, either group of students might be identified as positively motivated or negatively motivated, depending upon the other factors involved. Even though the approach-avoidance dimension suggests directionality, that concept applies to the behavior of the learners in relation to the attainment or rejection of certain objectives or goals.

The directional differences probably reside in whether the *source* of motivation for the individual is primarily internal or external or whether the motivation is mainly intake or output in form. In other words, the *directional* dimension (approach-avoidance) is only meaningful when understood in relationship to the other dimensions: it is the interaction of this dimension with the other dimensions which reveals whether a student's motivation is positive or negative. To say it still another way, it is the *pattern* of relationships among dimensions which is crucial.

Q. *Can you give us some examples of what is meant by "pattern of relationship"?*

Any observer of the educational scene knows that some students whose motivation to learn is positive may move toward (approach) reading (intake) an exciting novel (external stimulus) whereas other youngsters who are also positively motivated might move away from (avoidance) teacher approval (external stimulus) in order to generate (output) a graphic description of social equality for a history course, for example.

The concepts of positive and negative motivation, therefore, are only meaningful if the pattern of relationships among dimensions is considered. Some internal factors are positive, some are negative. Some external factors are positive, some negative. The same thing is true for approach, avoidance, intake, and output aspects of the other dimensions. Some positive forms of academic motivation express themselves in certain types of intake or output or approach or avoidance behaviors in response to various internal and external sources. But negative motivation is expressed through such behaviors also, so it is only through a consideration of the precise pattern of relationships among dimensions that we can bring meaning and utility to the concept of academic motivation.

The various dimensions of academic motivation can be thought of both in relationship to one another and in positive and negative terms. Employing this approach, it is evident that there are sixteen different facets of academic motivation according to the theory we have described. The best that can be done at the present time is to hypothesize along lines such as these and to develop instruments and procedures to test these hypotheses carefully. With the development of new and different instruments, the dimensions themselves will become more obvious or modified as empirical data are fed back to test the theoretical model.

Q. *Can you give us some examples of the dimensions broken down in positive and negative behavior?*

I can, but let me caution that the pattern or relationship is all important here, not the specific incidents or behavior described. The pattern will appear only after many observations.

Positive Examples of the Internal-External Dimension

(I) Sense of worth
(I) Feeling of acceptance
(I) Ability to tolerate ambiguity
(I) Positive concept of other persons
(I) Lack of prejudice
(I) Belief in the importance of information
(I) Minimum of defense mechanisms
(E) Variety of points of view
(E) Validity of information
(E) Variation in sequence of stimuli
(E) Multisensory stimuli
(E) Accessibility of stimuli

Negative Examples of Internal-External Dimension

(I) Excessive anxiety or fear
(I) Jumping to conclusions
(I) Fear or dislike of authority per se
(E) Limited sources of information
(E) Information embedded in other stimuli (hard to get it)
(E) Sequencing of stimuli unduly repetitive
(E) Validity postulated with few or no external referents

Positive Examples of Intake-Output Dimension

(I) Voracious reading
(I) Sensitive, attentive listening
(I) Surprise when confronted with novelty
(I) Question-asking for information
(I) Browsing in the library
(O) Writing extensively
(O) Practicing skills
(O) Arguing fine points in a discussion
(I-O) Insisting that contrary views be presented

Negative Examples of Intake-Output Dimension

(I) Being quiet but not hearing
(I) Reading the assignment without comprehension
(I) Inattentiveness
(O) Disruptive talk during discussion
(O) Talking about the opposite sex all the time
(O) Disruptive actions such as throwing spitballs
(O) Telling teacher off

Positive Examples of Approach-Avoidance Dimension

(Ap) Attending nonrequired lectures or visiting museums
(Ap) Ordering information by mail
(Ap) Seeking out persons with opposing points of view
(Ap) Establishing and following definite study routines
(Av) Dropping a course which is poorly taught
(Av) Turning off radio during study hours
(Av) Staying away from the gang some of the time

Negative Examples of Approach-Avoidance Dimension

(Ap) Going to movies instead of doing homework
(Ap) Doing homework just to get teacher's approval
(Ap) Copying from seatmate during examination
(Ap) Excessive talking with friends on the telephone
(Av) Dropping out of school
(Av) Daydreaming
(Av) Giving up during test
(Av) Reluctance to ask questions when in doubt

Let me emphasize again, three things, at least, are important about these listings. First, they are neither complete nor discrete nor adequately described in the limited space here. Second, only the interactions among the dimensions are ultimately of assistance to the person who wants a valid conceptualization of academic motivation. Third, all ignore what must be a very important mediating-type behavior, such as what happens in the mind of the student between intake and output activities, or how the internal personality characteristics affect the processing of external stimuli. The first point can be clarified only through further discussion and extensive research, the second point has been empha-

sized before, and the third point illustrates the relationship between learning theory and motivation theory.

Q. *Although you have said that motivation does not change drastically within short periods of time, it is obviously affected by specific events or student reactions to events. Are there some guides the teacher can follow to govern his day-by-day and week-by-week influence on motivation?*

Because such factors as values, stimulation, personality structure, dissonance, and anxiety can be affected or controlled, at least in part, by the teacher, implications for teaching become obvious. What teachers say, how they say it, and the values they reflect in their daily teaching all become perceivable substances from the learner's point of view. They are the feedback which students use to build their own conceptions of self.

Recent studies in the area of teacher behavior, for example, indicate that every teacher interacts with his class hundreds of times each day. Most of these interactions are so rapid that they are not deliberate or planned. The teacher is a very deliberate person before school starts in the morning when he is conceptualizing and planning his efforts for the day. Furthermore, the teacher is a very rational, thoughtful person after school is over in the afternoon as he reflects on how his plans went, what events occurred, and the like. But all day long the teacher is literally bouncing off the class. "Johnny, go to the board." "Betty, open your book." "Yes, Mary, what do you want?" "Say that again so everybody can hear you." "Tom, stop whispering, please." Hour after hour, day after day, the teacher bounces off his class hundreds and hundreds of times. And every bounce is feedback to the students in his group.

Some teachers have a basic bouncing style which is positive, while others are more negative. That is, some teachers' style of interacting is such that they feed a steady stream of positive feedback to the group: "Good work." "Keep it up." "That's fine, now do it once more so everyone else can see exactly how to solve that kind of problem."

Other teachers have a response mode which is essentially negative: "What is the matter with you, John?" "Why don't you keep quiet back there?" "Shut up." "Billy, for heaven's sake, everybody else has finished. Why haven't you?"

Feedback is the stuff out of which self-concept and values are built. Teachers must be aware of the kinds of feedback they provide for their students. The formal types of feedback (grades, written notices to parents) are important, but equally important are the thousands and thousands of specific instructions, demands, responses, and reactions which teachers make regularly and generally without careful thought.

Q. *What can be done by faculty and administrators to affect the climate for motivation?*

Educators' objectives and purposes are central to any consideration of what will help students learn to want to learn in school. Goals have at least two qualities—clarity and acceptability—and teachers probably have considerable control over the former but little if any control over the latter; thus the motivational problems in school emerge.

Working to clarify goals and state objectives precisely in behavioral terms will help students learn to want to learn if the goals are acceptable to them. No matter how clearly stated they are, goals that are inappropriate or unacceptable in the student's view will only increase his discomfort and resistance toward the school. Meaningful involvement and relevant curricula are probably more directly related to acceptability of goals than clarity of goals. Teachers should generate objectives out of student concerns rather than subject matter concerns. The relationship of motivation and teaching and goals must be sorted out more carefully than we have done heretofore. Several questions along this line which need to be explored through careful research are:

What curricular experiences, what organizational strategies, and what evaluative procedures will be most likely to affect the development of motivational factors over extended periods of time?

Does the "right answer philosophy," which seems to characterize so many classroom teachers' examinations and

so many schools' operating policies, teach youngsters to be intolerant of ambiguity, and thus develop more negative motivations to learn in school?

Does the increasing obviousness of the vocational aspects of curriculum, from the students' point of view, cause motivations to change over time? For example, even advanced mathematics or foreign language tend to be seen by high school students as courses which are essential for them to go to college and get a degree in order to make more money.

Is it possible for young people to value the abstract or the aesthetic or the general if their parents or teachers do not reflect these values?

Will cognitive growth and mastery learning affect a youngster's concept of self in positive ways?

Can students learn to be more open and less defensive as they encounter the novel and the unknown?

What sequencing and pacing of information will be most conducive to developing a learner's desire to learn?

Theory development, test development, curriculum development, and student development must go hand in hand. From this point on, researchers, test constructors, and educational developers must generate hypotheses to test in the laboratory and in the classroom.

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